E&MJ METAL AND MINERAL MARKETS

WEEKLY MARKET INFORMATION ISSUED BY THE PUBLISHERS OF ENGINEERING AND MINING JOURNAL

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THIS WEEK IN THE MARKETS . . .

- **Refined nickel price advanced 4½c per pound by International Nickel Co.**
- **ODM so far has diverted 32,692 tons of refined copper to relieve shortage.**
- **Tin unsettled in quiet market—Lead sales in fair volume at firm prices.**

COPPER—Domestic average 29.700c, ref'y.

Most operators now hold that the supply situation in copper will remain tight throughout December but prospects for larger output after the turn of the year appear bright. There is even a good chance that the Chilean producers will again take over the sale of their production before very long.

The Office of Defense Mobilization has announced that 32,692 tons of copper was made available to domestic fabricators to relieve the shortage resulting from recent strikes. Of the total, 16,358 tons was obtained from inventory held for Government use and 16,334 tons consisted of metal diverted from deliveries to the Government. Some 2,600 tons of Canadian copper scheduled for delivery to the U.S. stockpile was diverted for use in Canada at the request of the Canadian authorities.

U.S. fabricators shipped the equivalent of 116,232 tons of copper to their customers during October.

LEAD—15c, N. Y. (f.a.s. Gulf 13¼-13½c)

Demand for lead from domestic consumers has been holding up well, with sales for the week totaling 6,470 tons. This compares with 5,649 tons in the preceding week. The price situation here was unchanged, with the undertone of the market firm on the 15c N. Y. basis.

Shipments of replacement batteries by U.S. manufacturers during October totaled 2,670,000, which compares with 2,728,000 in the preceding month and 2,825,000 in October last year, according to Dun & Bradstreet.

ZINC—11½c, East St. Louis (f.a.s. Gulf 10c)

The Government is expected to come into the market in the near future for additional supplies of zinc for its stockpile. As long as such purchases continue the price situation domestically is unlikely to change, even though some foreign metal has been available here at concessions. Special High Grade zinc, the die-casting grade, has felt most of this competition from abroad during recent weeks. However, with increased activity in the automobile industry, die-casters have been doing nicely of late.

London was unsettled on fairly liberal offerings.

NICKEL—64½c, f.o.b. Pt. Colborne.

The International Nickel Co. of Canada announced an increase of 4½c (U.S.) per pound in the price of refined nickel, effective Nov. 24, 1954. Like increases were announced by the company's U.S. and U.K. subsidiaries. Higher production costs caused the upturn in the price.

This brings the export price of electrolytic nickel from Port Colborne, Ont., to 64½c (U.S.) per pound, including the 1¼c U.S. import duty. The corresponding price in Canada at existing exchange rates is 61.4c.

Similar price changes were announced for nickel oxide sinter and other forms of primary nickel.

The price changes, it was announced, are intended to offset higher costs and are not expected to "unduly impair the maintenance and development of the markets for nickel and nickel-containing products."

TIN—90⅞c, prompt, N. Y.

Activity in tin was restricted largely to dealer business. Prices were unsettled and slightly lower compared with a week ago. Actual consumption of tin in the U. S. has probably increased, following the trend in steel operations.

Malayan production of tin contained in ore amounted to 5,083 long tons in October, which compares with 4,875 tons in October last year. Production in the Jan.-Oct. period totaled 50,141 tons, against 46,288 tons in the like period of 1953.

QUICKSILVER—$318-$322, N. Y.

Demand has moderated because most consumers are limiting their purchases in anticipation of an easier price situation in the early months of 1955. The undertone was easier and nearby European metal was offered at $318 per flask, or $2 below the level named in the preceding week. For spot metal sellers were asking $320 and upward, depending on quantity.

SILVER—85¼c, N. Y. (London 74¼d)

Business has been satisfactory and quotations firm on the basis of 85¼c per troy oz, N. Y.

London reports a steady market on reduced offerings from outside sources.

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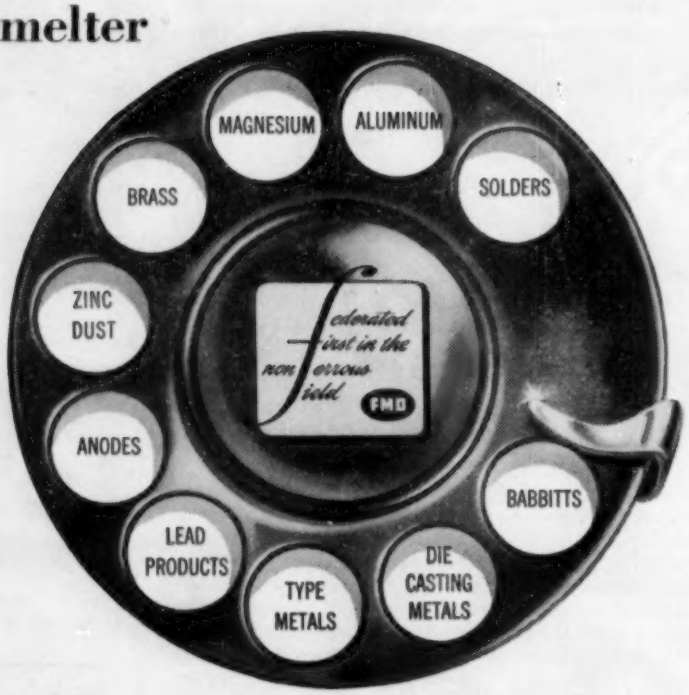
More Customers Buy More Non-Ferrous Metals From FEDERATED Than From Any Competing Smelter



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E&MJ METAL AND MINERAL MARKETS

WEEKLY MARKET INFORMATION ISSUED BY THE PUBLISHERS OF ENGINEERING AND MINING JOURNAL

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Looks for Steady Rise in Acid-Grade Fluorspar Needs

In a summary of the fluorspar situation in the current issue of the "Asarco News Letter," Peter E. Caron observes that importations of acid grade have increased, partially as a result of the construction of drying plants in Wilmington, Del., to handle the wet cake landed there, but mainly because of the entry of Mexico as a major shipper. Spain and Newfoundland had been the main sources of imported spar until 1952, when Mexico's potential was first realized.

"Owing to oversupply, today's price for acid grade fluorspar is depressed as compared to peak prices during World War II and the Korean conflict, when it sold for $65 a ton, f.o.b. domestic mine. Domestic fluorspar is now offered at $47.50 to $53. Imported material has been sold at port of entry at prices as low as $30 a ton, duty paid, for acid grade gravel, a hand-picked and jigged product which must be ground prior to use," Mr. Caron states.

"The American Smelting & Refining Co. decided to enter the fluorspar picture in Mexico in 1953," the author points out, adding: "Ore reserves were acquired and a mill and flotation plant constructed at Agujita, 10 mi. from Asarco's operations in Rosita.

"The Encantada Plant, as it is known, owned by Cia. Minera Nacional, S. A., and rated at 2,200 tons of acid grade concentrate a month, was completed in June 1953, and shipments began in July. Rather than undertake actual mining of fluorspar, the company decided to purchase the mill feed requirements from scores of small local producers.

"In May of this year the company's fluorspar operations were expanded by entry into the market of an exceptionally high quality metallurgical grade material. This ore, which originates in the Paila district, is stockpiled at Castanos and is screened and shipped in boxcars or open gondolas either directly all-rail through Eagle Pass, Tex. or to the port of Brownsville, Tex., where it is accumulated and sent up the Mississippi in barge lots to Chicago and Pittsburgh.

"Asarco's entry into fluorspar production was based on a conviction that, in the near future, U.S. requirements for fluorspar will materially increase. The requirements of the acid industry alone could easily double in a few years."

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73,616 Tons of Slab Zinc Consumed in September

Consumption of slab zinc in the U.S. during September was 73,616 tons, which compares with 73,529 tons in August, according to an estimate by the Bureau of Mines. Consumption in the Jan.-Sept. period averaged 70,254 tons a month. Slab zinc used in zinc-base alloys increased 5% over August, and in brass products the gain was 2%.

Use of zinc during September and the nine months ended September, according to products by industry groups, in tons, was as follows:

	Sept. 1954	Jan.-Sept. 1954
Galvanizers:		
Sheet & strip	16,518	132,851
Wire & wire rope	2,726	33,633
Tube & pipe	8,201	56,364
Fittings	735	7,492
Other	8,411	65,377
Total	37,591	295,717
Brass Mills:		
Sheet, strip & plate	3,640	36,650
Rod & wire	2,810	21,885
Tube	1,058	8,768
Castings & billets	531	3,748
Copper-base ingots	436	4,625
Other products	30	582
Total	8,505	76,258
Die Casters:		
Die castings	20,159	190,909
Stamping dies, rod	608	5,953
Slush, sand castings	213	1,453
Total	20,980	198,315
Rolling mills	3,153	34,479
Oxide plants	1,556	13,340
Other	1,481	11,175
Total reported	73,266	629,284
Estimated unreported consumption	350	3,000
Total	73,616	632,284

Consumers' stocks of slab zinc at the end of September totaled 93,921 tons, which compares with 95,666 tons on hand a month previous, the Bureau reports. Galvanizers had 44,370 tons on hand on Sept. 30; brass mills 14,460 tons; die casters 29,361 tons; rolling mills 4,204 tons; oxide plants 153 tons; and others 1,373 tons.

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October Industrial Output Up; November Likely to be Higher

The Federal Reserve Board's index of industrial production in October hit 125% of the 1947-49 average, seasonally adjusted, for the first time since February of this year. From March through September the index varied from 123 to 124.

The index reached its post-war high of 137% of the base period in May and July of 1953.

The November 1954 index should be higher than 125. The October index includes a very low figure for the automobile industry which was producing at a lower than usual seasonal rate for that month. In October the auto index was 78% of the 1947-49 rate. With the considerable uplift in November the total index should move up, unless other things go into reverse.

The output of durable manufactures was holding up the index. They were, in October, at 138% of the 1947-49 average, nondurable manufactures were 116%, minerals, including fuels, were 109%, and consumer durable goods were 104%. The low automobile output figure kept the consumer goods index down.

The Federal Reserve figure for output of fabricated metal products in October, seasonally adjusted, was 120% of the base period average. Notable was the rate of output of electrical machinery; in October it was 195% of the base period rate, in September it was 190% and in August it was 181%. In October of 1953 it was 193%.

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Industry in Europe Active

The United Nations Economic Commission for Europe, in its review of the second quarter of 1954, found that economic activity in most of Western Europe was well above 1953 levels.

The main countries of Western Europe were producing roughly 10% more than in 1953. These countries, except for Italy and Greece, have increased more in 1954 over 1953 than they did over the previous year. Most encouraging to the Commission was that the increase occurred "under conditions of internal and external financial stability." Italy, West Germany and Belgium have reduced their unemployment considerably.

Other reports indicate the European economy continues to advance.

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South Africa's Gold Output

Production of gold in South Africa during August totaled 1,137,000 oz, according to the American Bureau of Metal Statistics. In the eight months that ended with August, production averaged 1,071,875 oz a month. This compares with a monthly average of 995,000 oz for all of 1953.

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Miscellaneous Metals

Quotations cover wholesale lots, f.o.b. New York, unless otherwise specified.

ALUMINUM—Per lb., base price, f.o.b. shipping point: 30 lb. ingot, 99% plus, 22.2c.; in pigs, 20½c., effective Aug. 5.

Base prices on aluminum ingot of higher purity: 99.75%, 22.7c.; 99.8%, 23.2c.; 99.85%, 24.2c.; 99.9%, 25.2c.

ANTIMONY — Cents per lb., 99½% grade:

	Domestic Boxed (a) New York	Domestic Bulk (b) Laredo
Nov. 18	31.970	28.500
Nov. 19	31.970	28.500
Nov. 20	31.970	28.500
Nov. 22	31.970	28.500
Nov. 23	31.970	28.500
Nov. 24	31.970	28.500

(a) Boxed (224 lb.), 10,000 lb. or more but less than carload. (b) In bulk, carload, f.o.b. Laredo; boxed one-half cent extra.

BISMUTH — Per lb., in ton lots, $2.25.

CADMIUM — Per lb., delivered.

	Commercial Sticks	Special (a) Shapes
Nov. 18	$1.70	$1.70
Nov. 19	1.70	1.70
Nov. 20	1.70	1.70
Nov. 22	1.70	1.70
Nov. 23	1.70	1.70
Nov. 24	1.70	1.70

(a) Special shapes to platers

CALCIUM — Per lb., in ton lots, cast in slabs and small pieces, $2.05.

CHROMIUM — Per lb., 97% grade, 0.5% C, $1.16; 9-11% C, $1.25. (Usually sold as chrome-metal.)

Electrolytic chromium, commercial grade, 99% min., f.o.b. Niagara Falls, N. Y., per lb.: $1.16.

COBALT—Per lb., rondelles or granules, in 500 to 600 lb. containers, $2.60; in 100 lb. containers, $2.62; less than 100 lb. containers, $2.67. Prices ex. docks or store N. Y. or Niagara Falls.

Cobalt fines, $2.60 per lb. of Co contained, f.o.b. N. Y. or Niagara Falls, standard package of 650 lb.

COLUMBIUM — No quotation. Pricing "subject to special terms."

GALLIUM — Per gram, in 1,000 gram lots, $3; 1 to 999 grams, $3.25.

GERMANIUM — Per lb., $295.

INDIUM — Per oz. troy. 99.9%, $2.25.

IRIDIUM — Per oz. troy, $130@$135.

LITHIUM — Per lb. 98%, $11@$14, depending on quantity.

MAGNESIUM — Per lb., 10,000 lb. lots: Pig ingot 99.8%, Freeport, Tex., 27c.; Port Newark, N. J. or Madison, Ill., 28.2c. Notched ingot, Freeport, 27¾c.; Port Newark or Madison, 29c.

MANGANESE—Per lb., delivered, 95.5% Mn, 2 in. x down, carloads, bulk, 45c.; packed, 46¼c.

Electrolytic, per lb., f.o.b. Knoxville, Tenn., with freight allowed east of Mississippi; Min. 99.9% Mn.; Carload 30c.; ton lots, 32c. Premium for hydrogen-removed metal 0.75c. per pound.

MOLYBDENUM — Per lb., 99% $3.00.

NICKEL — Per lb., electrolytic cathodes, f.o.b. Port Colborne, Ont., contract price, 64½c, U. S. import duty included. Nickel oxide sinter, 60¾c per lb. of nickel content, f.o.b. Copper Cliff. Effective Nov. 24.

OSMIUM — Per oz., $140, nominal.

PALLADIUM — Per oz. troy, $17@$21.

PLATINUM — Per oz. troy, wholesale lots $77@$84.

QUICKSILVER — Per flask of 76 lb., $318@$322.

RADIUM — Per mg. radium content, $16@$21.50, as to quantity.

RHODIUM — Per oz. troy, $125.

RUTHENIUM — Per oz. troy, $60@$65.

SELENIUM — Per lb. Producers' price, $5; distributors, 100-lb. lots, $6.

SILICON — Per lb., minimum, 97 percent Si, maximum 1 percent Fe, crushed, carload lots, in bulk, 18½c.

SODIUM — Per lb., carload lots, in drums, 16½c.; less than carload lots, 17c.

TANTALUM — Per kilo, base price, $137 for rod; sheet, $93.

TELLURIUM — Per lb., $1.75.

THALLIUM — Per lb., $12.50.

TITANIUM — Per lb., Grade A-1, 99.3% plus, maximum .3% iron, $4.72, f.o.b. Newport, Del. (On maximum .5% iron, $4.46). Effective April 1, 1954.

TUNGSTEN — Per lb., 98.8% minimum 1,000 lb. lots, $4.95, nominal. Hydrogen reduced, 99.9% plus $4.65.

ZIRCONIUM — Per lb., powder, $7.

Metallic Ores

Prices in tons of 2,000 lbs., or "units" of 20 lb., unless otherwise stated.

ANTIMONY ORE—Per unit of antimony contained, 50 to 55 percent, $3.25@$3.35; 55 to 60 percent $3.50@$3.60; 60 to 65 percent $4.30@$4.40.

BERYLLIUM ORE — Per unit BeO contained, 10-12% f.o.b. mine, Colorado, $46@$48, depending on quantity.

Special domestic GSA price at depots in North Carolina, South Dakota, and New Hampshire for lots up to 25 tons per year, per short ton unit BeO: 8-8.9%, $40; 9.0-9.9%, $45; 10% or more, $50. Larger lots subject to negotiation.

Imported ore, per short ton unit of BeO, c.i.f. U.S. ports, basis 10% to 12% BeO, $39.

CHROME ORE—Per long ton, dry basis, subject to penalties if guarantees are not met, f.o.b. cars N. Y., Phila., Balt., etc.

Rhodesian:
48% Cr_2O_3, 3 to 1 ratio lump (b)$43.00@$44.00
48% Cr_2O_3, 2.8 to 1 ratio.. (b)$40.00@$41.00
48% Cr_2O_3, no ratio..... (b)$32.00@$33.00
South African (Transvaal):
48% Cr_2O_3, no ratio.....$31.00@$32.00
44% Cr_2O_3, no ratio.....$21.00@$22.00
Turkish:
48% Cr_2O_3, 3 to 1 ratio, lump... (a)$45@$48
Pakistan (Baluchistan):
48% Cr_2O_3, 3 to 1 ratio..... (a)$44@$45

(a) Nominal. (b) Long term contracts.

COBALT ORE — Per lb. of cobalt contained, f.o.b. Cobalt, Ont., 9% grade, $1.30; 10%, $1.40; 11%, $1.50; 12%, $1.60.

COLUMBIUM - TANTALUM ORE — Special DMPA domestic purchase price delivered f.o.b. depots in North Carolina, New Hampshire, and South Dakota, minimum Cb_2O_5-Ta_2O_5 in any ratio, per lb. acceptable material, $1.70 plus 100% bonus, equivalent to $3.40 per lb. of combined contained pentoxide in 50% ore.

IRON ORE — Per long ton, Lower Lake ports. Lake Superior ore:

Mesabi non-bessemer, 51½ percent iron, $9.90. Old Range, non-bessemer, $10.15.

Mesabi, bessemer, 51½ percent iron, $10.05. Old Range, bessemer, $10.30.

Eastern ores, cents per long ton unit, delivered at furnaces: Foundry and basic, 56@62%, 17@18c.

Swedish, 60@68% (contracts), per unit, 22c. plus, depending on grade, c.i.f. Atlantic ports.

Brazilian, per gross ton, 68.5% iron, f.o.b. port of shipment: Contracts $12.00; nearby business $12.25@$12.50.

MANGANESE ORE—Demand improving and undertone firmer, particularly on forward business. Freight rates have been rising.

Indian ore was nominal at 70@75c per long ton unit of Mn, c.i.f. U.S. ports, duty extra, basis 46 to 48% Mn, nearby positions.

On long-term contracts for ore from various sources, 46@48% Mn, quotations nominal at 70@72c, c.i.f. U.S. ports, duty extra.

Low iron, 48% Mn (max. 2% Fe), 90c per long ton unit of Mn, duty paid.

Chemical grade, per ton, coarse or fine, minimum 84 per cent MnO_2, carloads, in drums $96; burlap bags $90.50. f.o.b. Philadelphia.

MOLYBDENUM ORE — Per lb. of contained MoS_2, 90% concentrate, 60c.; f.o.b. mines.

TITANIUM ORE—Per gross ton, ilmenite, 59.5% TiO_2, f.o.b. Atlantic seaboard, $18@$20, nominal.

Rutile, per lb., minimum 94% concentrate, 6¾@7c.

TUNGSTEN ORE — Per short ton unit of WO_3, concentrates of known good analysis, basis 60%:

Foreign ore, per short ton unit of WO_3, nearby arrival, c.i.f. U.S. ports, duty extra: Wolfram. $25.25@$25.50; scheelite $27.50@$28.00.

Western high grade scheelite concentrate, $63 per unit, f.o.b. mine.

North Carolina high grade concentrate, $63 per unit, f.o.b. mine.

London, per long ton unit of WO_3, buying prices, good ore: Wolfram 192s bid, 196s asked.

VANADIUM ORE — Per lb. V_2O_5 contained, domestic, 31c., f.o.b. mine.

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MANGANESE ORES

ZIRCON ORE (sand) — Per long ton, c.i.f. Atlantic seaboard, minimum 65 percent ZrO_2, $47@$48.

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Metallic Compounds

ANTIMONY TRIOXIDE — Per lb., carload lots, in bags, 29c.; less than carload, 30½c.

ARSENIOUS OXIDE (arsenic trioxide), refined, white, min. 99%, per lb., 5½c., in barrels carload lots delivered.

COBALT OXIDE — Ceramic grade 72½ to 73½% Co, $1.96 per lb. east of Mississippi and $1.98½ per lb. west of Mississippi. Quotations are for oxide packed in 350-lb. containers.

Tungsten

Tin

Antimony

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GERMANIUM OXIDE — Per lb., $142.

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Rolled Metals, Etc.

BRASS — Cents per lb. (base prices)

	Sheet	Wire	Rods
Yellow Brass	41.72	42.26	a35.07
Best quality brass	43.13	43.67	43.07
Red brass 80%	44.47	45.01	44.41
Red brass 85%	45.44	45.98	45.38
Com'l bronze	46.93	47.49	46.89
Gilding metal	47.93	....	47.87

(a) Free cutting

CADMIUM — Per lb. Special shapes, to platers, $1.70.

COPPER — Per lb. Sheets, over 20 in. wide, 48.38c., rolls 20 in. and under, 46.31c.; Wire, bare, carload lots f.o.b. mills 35.98c.

LEAD SHEETS — Per lb., full rolled, 140 sq. ft. 20c.

MONEL METAL — Per lb. (base prices) Standard cold-rolled sheet, 78c.; cold-rolled strip, 87c. Rods, hot-rolled 69c.

NICKEL — Per lb. (base prices) sheets, cold-rolled, $1.02; rods, hot-rolled, 87c.

NICKEL SILVER — Per lb., sheets, 10 percent, 55.36c.; 18 percent, 58.80c.; wire and rods, 10 percent, 58.80c.

PHOSPHOR BRONZE — Per lb., sheets, 5 percent tin, 66.58c.; wire and rods, 5 percent 67.08c.; 10 percent 73.06c.

ZINC — Per lb., carload lots f.o.b. mill (base price): Sheet 23c.; ribbon 19@20½c.; plates 18@21¾c., depending on size.

ZINC DIE-CASTING ALLOY — Ingot, per lb., carload lots, delivered, 15½c.

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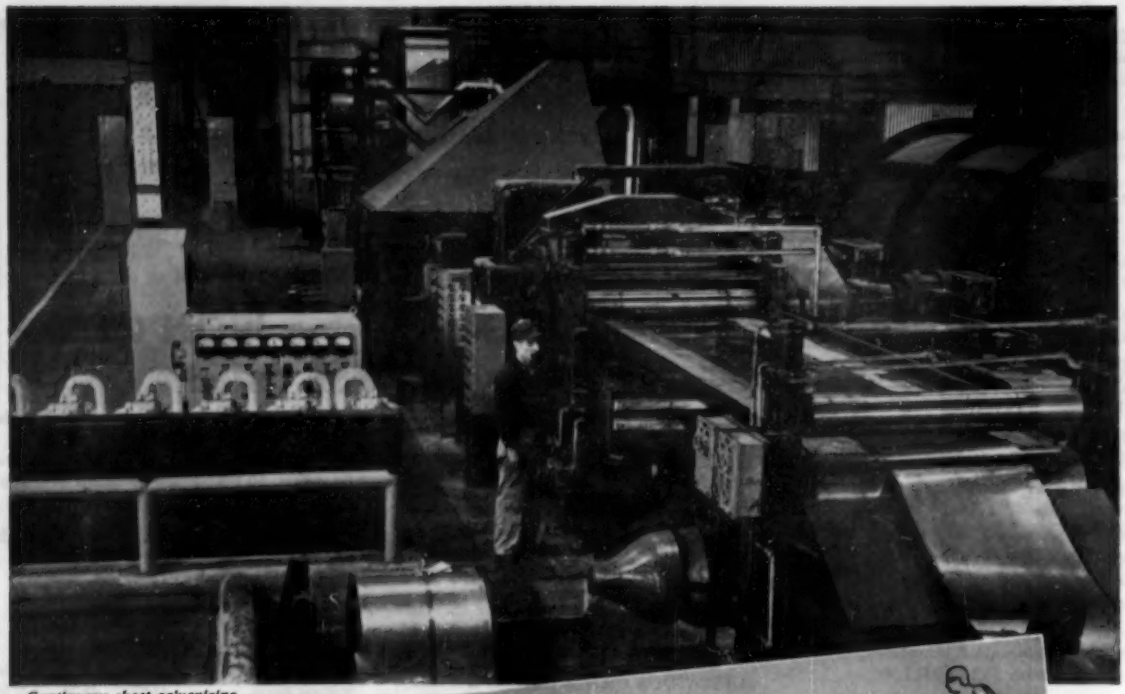
United States Gold Price

The price paid by the United States Treasury for gold purchased by the mints continued at $35 per troy ounce of fine gold, less ¼ of 1 percent.

Actual payment by the United States Treasury for gold in imported and domestic ore or concentrate is at 99.75 percent of the price quoted by the Treasury, which at present is equal to $34.9125 per ounce.



Continuous sheet galvanizing.

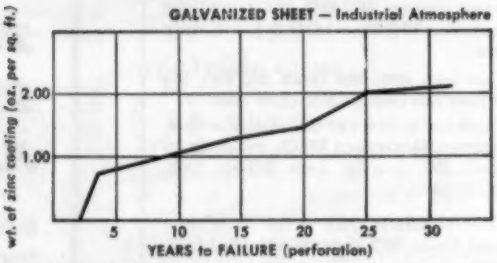
Over 350,000 tons of Zn annually for "embalming"

ONE OF the most persistent problems confronting the iron and steel industry is the prevention of corrosion; its persistence stems from the fact that we cannot rid ourselves of the agents which effect the corrosion without, at the same time, ridding ourselves of elements — air and water — which are essential to life itself.

Iron does not occur naturally in the metallic state, but only in combination with oxygen and other elements in the form of ore. The smelting of iron is essentially a process for removing the oxygen from the ore by the application of heat; while rusting is, in essence, the reversion of the metal to its natural state by recombination with the oxygen in the air. The rusting process, being electrochemical in character, is actually far more complicated since the moisture and impurities present in the air play a very important part. There is thus a close relationship between the processes connected with the preservation of organic tissue and the prevention of rust. However, while human beings stave off the decaying or "rusting" of their tissues by nutrition, no means have been developed for "feeding" or regenerating iron and, until such time, industry has adapted the ancient Egyptian practice of "embalming."

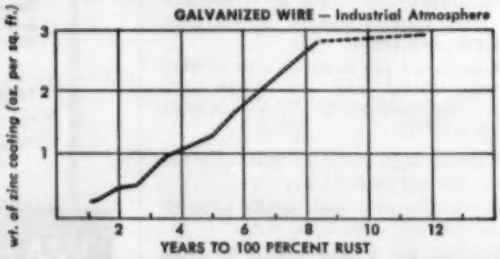
The most widely used method of "embalming" iron and steel products to prevent their decomposition is by galvanizing, i.e., zinc coating. The fact that, for many years, nearly 50% of all the zinc consumed annually in the United States is used for this purpose, is ample evidence of the firmly established position of the metal as industry's most effective "sacrificial" weapon in its unceasing combat with the ravages of rust.

ST. JOSEPH LEAD COMPANY
250 PARK AVENUE, NEW YORK 17, N.Y.



• "The most important factor in determining the lives of zinc coatings in industrial atmospheres is the weight of zinc applied." *from U.S. Bureau of Standards, Circular #80*

• The remarkable protective effect of zinc on iron is due to the fact that for electrochemical reasons corroding agents will attack zinc in preference to iron if the two are in contact. Rusting of iron does not occur even at scratches or cut edges of a galvanized coating so long as any zinc remains within about one quarter inch of the exposed iron surface.



ST. JOE *electrothermic* **ZINC** HIGH GRADE • INTERMEDIATE • PRIME WESTERN

VITAL STATISTICS OF PRINCIPAL METALS

	Oct. 1954	Sept. 1954	Aug. 1954	Year Ago (d)	% Change Latest Mo. and Year Ago	1953 Average
COPPER						
Avg. price per lb., electro (a)	29.700	29.700	29.700	29.598	(f)	28.798
Production: Dom. ref., tons	92,258	87,874e	103,901	126,138	− 27	116,250
Dom. crude prim.	68,521	61,612	52,825	83,433	− 18	79,777
Shipments to fabricators	105,293	88,947	92,475	110,519	− 5	120,310
Stocks at end, ref. dom	32,515	47,666	58,387	84,303	− 61	.....
Fabricators' shipments	116,232	106,628e	102,966	116,259	(f)	114,656
Stocks at end	330,787	341,726e	359,474	352,091	− 6	.....
Imports: Blist. & ref.	.....	42,962	43,933e	42,694	+ 1	45,690
In ore etc.	.....	10,513	10,618	15,282	− 31	10,048
Exports: Refined	.....	13,464	23,245	9,983	+ 35	9,126
LEAD						
Avg. price per lb., N. Y.	14.965	14.598	14.058	13.500	+ 11	13.489
Production, tons (b)	51,276	47,762	44,089	44,741	+ 15	44,490
Shipments, dom.	36,307	(g) 30,891	43,402	44,987	− 19	40,703
Stocks at end, dom.	95,496	93,358	84,429	58,236	+ 64	.....
Dom. mine prod., metal cont.	.....	24,936	27,111e	26,526	− 6	28,100
Imports, refined	.....	29,047	24,644	20,162	+ 44	32,091
ZINC						
Avg. price per lb., St. L. p.w.	11.500	11.408	11.000	10.000	+ 15	10.855
Production, refined, tons	67,047	60,137e	71,810	84,031	− 20	80,933
Shipments, refined (c)	90,415	77,885e	76,584	67,175	+ 35	73,126
Stocks at end, dom. ref.	152,137	175,505e	193,253	158,417	− 4	.....
Dom. mine prod., metal cont.	.....	34,430	38,745e	39,188	− 12	44,561
Imports: Ref. metal	.....	10,914	11,410	10,351	+ 5	19,548
In ore	.....	40,954	44,721	44,018	− 7	42,433
ALUMINUM						
Avg. price, per lb., ingot	22.200	22.200	22.106	21.500	+ 3	20.931
Production, tons	125,089	120,332	125,296	108,219	+ 16	104,333
Shipments, dom. metal	.....	141,709	130,668	106,720	+ 33	101,663
Stocks at end, dom. metal	.....	48,872	70,249	26,991	+ 81	.....
Imports, crude metal	.....	.....	20,144	28,478	.....	25,084
TIN						
Avg. price per lb., N. Y., Straits	93.055	93.535	93.356	80.904	+ 15	95.845
Production, Longhorn, long tons	.....	2,404	2,002	2,700	− 11	3,130
Consumption, primary	.....	4,600	4,700	4,276	+ 8	4,497
Stocks at end, RFC & cons.	.....	42,313	40,961	46,996	− 10	.....
Imports, metal	.....	.....	5,487	6,992	− 22	6,211
Imports, in ore	.....	.....	2,562	1,214	+111	2,998

(a) F.O.B. refineries, Atlantic seaboard. For average New England delivered price, add 0.300c.
(b) By primary domestic refineries.
(c) Includes export drawback and Gov't account.
(d) The month of the previous year corresponding to the latest month shown on the same line.
(e) Revised. (f) Less than 0.5% change.
(g) In addition 22 tons were exported.

Sources: Copper production, shipments and stocks—Copper Institute. Lead production, shipments and stocks—American Bureau of Metal Statistics. Slab zinc—American Zinc Institute. Aluminum—U.S. Bureau of Mines. Tin—Department of Commerce and Bureau of Mines.

(A regular feature appearing in the last issue of each month)

COPPER ...we've only scratched the surface

The old-time miner got his ore by the shovelful. Today, at the controls of huge power shovels, he can scoop as much as 17 tons at once.

THE FULL EXTENT OF COPPER RESERVES in the U. S. has never been established. Huge open pit mining operations are literally moving mountains of copper ore, and yet the copper industry's capacity to serve America's manufacturers increases year by year.

That is because constantly improving techniques, such as power shovels that scoop up to 17 tons in a bucketful, turn immense bodies of what was once considered just rock into multi-million dollar mining projects. Today, copper is being extracted profitably from ores with an average metal content of only 0.85%. As the grade of ore which can be mined commercially becomes lower, copper reserves are multiplied. These factors, together with further exploration of present sites, and new discoveries, are progressively extending our copper supplies.

Current projects in the United States alone will provide a net increase in productive capacity of ¼ million tons of copper annually by 1956. This is a gain of more than 25% over 1953 figures. Similarly, substantial increases are being reported from foreign sources, thus satisfying the growing world demand and making more copper available for U. S. import. In addition to this primary copper, steady increases in scrap receipts are further adding to the total copper supply.

In the search for both quality and economy, American industry has found that it pays to use copper and brass. Ease of fabrication, high conductivity of heat and electricity, corrosion resistance, and a host of other desirable qualities simplify production problems and produce a handsome, durable product. This unique combination of properties has resulted in a steady increase in copper consumption. Except for temporary disturbances, to which any industry is subject, the output of copper has always been ample to satisfy these demands.

Every day brings new developments made possible by copper and copper alloys. From the heart of an atom smasher and the huge generators and heat exchangers of nuclear power stations to the multitude of electrical and electronic gadgets which makes modern life so pleasant, copper continues to hold the key to progress. *We've only scratched the surface.*

Ask *your* supplier how copper and brass can help you.

Copper or its alloys provide these advantages:

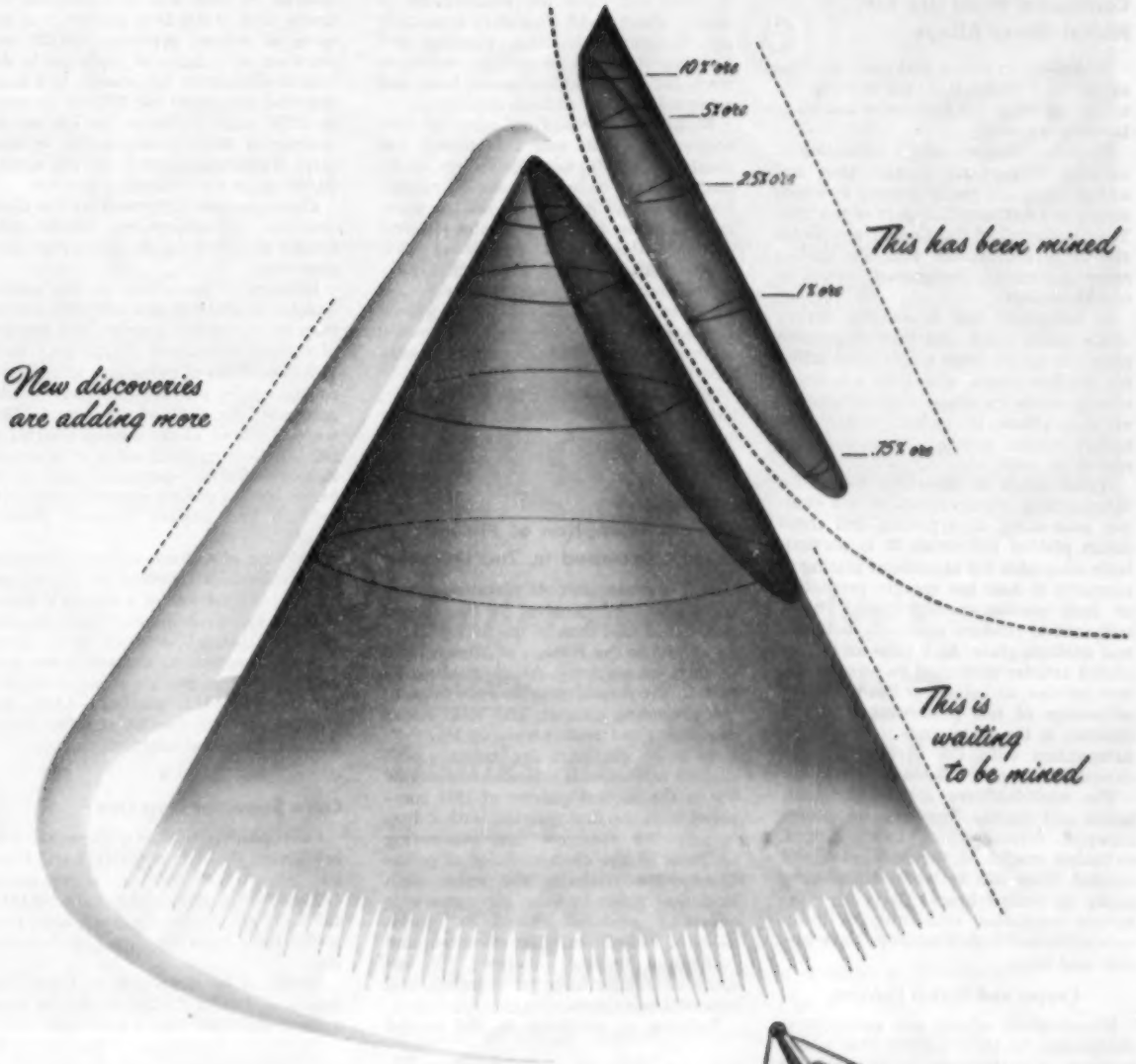
Best conductor of electricity commercially available.

Does not rust... high corrosion resistance.

Best heat transfer agent of all commercial metals.

Easy to machine, form, draw, stamp, polish, plate, etc.

Welds readily... excellent for soldering and brazing.



All these projects will be in **operation by 1956**

If all the copper ore in the U. S. were placed in one huge pile it would look something like this. As a rule, reserves have been mapped out precisely only at the site of mining operations and then only to the extent immediate plans require. There is no indication that a limit is being approached and reserves of ore appear adequate to maintain U. S. mine production at a high level indefinitely.

For instance, there are eleven new copper mining projects, both open pit and underground, which will be put in operation by 1956. Six of them have already started production. An estimated net of 250,000 tons of copper will be added to annual domestic mine capacity. The known reserves of these projects alone total over one billion tons of ore.

Project	Planned Production—Tons Copper per year	Start of Operation
Copper Cities, Arizona	22,500	Operating
Deep Ruth, Nevada	18,000	1955
Greater Butte Project, Montana	45,000	Operating
Kimbley Pit, Nevada	9,000	Operating
Lavender Pit, Arizona	38,000	Operating
Miami Extension, Arizona	11,500	1955
Osceola Mine, Michigan	7,000	1955
San Manuel, Arizona	70,000	1956
Silver Bell, Arizona	18,000	Operating
White Pine, Michigan	35,000	Early 1955
Yerington, Nevada	33,000	Operating

COPPER & BRASS RESEARCH ASSOCIATION

420 Lexington Avenue, New York 17, N. Y.

Continued Wide Use for Nickel-Silver Alloys

Nickel-silver alloys, first used in China as far back as 235 B.C., are in wide use today especially for decorative and utilitarian purposes.

Nickel-silvers are alloys consisting of varying proportions copper, zinc and nickel. They are really brasses in which nickel is substituted for part of the zinc. The "Bulletin" of the Copper and Brass Research Association suggests that a more appropriate designation would be nickel-brasses.

Nickel-silver has a natural silvery white color, much like that of genuine silver. It ranges from a soft ivory white for the low nickel alloys, to a brilliant silvery-white for alloys containing higher proportions of nickel. These high nickel alloys closely resemble pure nickel in color.

Nickel-silver is especially suited for the exacting requirements of the etching, enameling, silverplating and chromium plating industries. It is particularly adaptable for chromium plating as normally it does not require preplating or flash coating, a high polish being sufficient to produce a smooth, adhesive and uniform plate. As a base for silver-plated articles subjected to wear in severe service, nickel-silver has the added advantage of not presenting a strong contrast to the plate since its whiteness harmonizes with the surface plate if exposed to wear or damage.

The nickel-silvers are highly malleable and ductile. They can be drawn, stamped, formed, spun, upset, forged, extruded, machined, threaded, cast, and welded. They can be worked almost as easily as yellow-brass. They have inherent toughness, uniformity of grain structure, and high resistance to corrosion and wear.

Copper and Nickel Content

Nickel-silver alloys are customarily designated by their copper and nickel content. Nickel-silver 65-18 contains 65% copper and 18% nickel. The remainder is zinc. Some nickel-silvers also contain small amounts of lead in order to provide better machining qualities.

Nickel-silver 65-18 is an alloy with a nominal composition of 65% copper, 17% zinc and 18% nickel. It is characterized by high resistance to corrosion and tarnish, excellent malleability and ductility, and has a silver-blue-white color. It can be fabricated by all of the usual processes and can be readily cold worked by drawing, hammering and spinning. It is by far the most popular nickel-silver alloy in use today. Typical applications of nickel-silver 65-18 are for hardware, architectural panels, lighting and plumbing fixtures, slide fasteners, tableware, hollow ware, costume jewelry, camera parts and optical goods.

Nickel-silver 55-18 contains 55% copper, 27% zinc and 18% nickel. It also possesses high resistance to corrosion and tarnish, combined with high fatigue strength. Nickel-silver 55-18 is preferred for resistance wire and strip, or where spring qualities are desirable, but it does not have the malleability of nickel-silver 65-18. This alloy is suitable for blanking, shearing, forming and bending; it is used for springs, resistance wire, hardware, optical goods, trim, and equipment in the process industries.

Nickel-silver 65-15 an alloy of 65% copper, 20% zinc and 15% nickel, has similar properties to nickel-silver, 65-18, but is whiter in color. It can be readily fabricated and is used for hollow ware, camera parts, optical goods and jewelry.

Nickel-silver 65-12 containing 65% copper, 23% zinc and 12% nickel, possesses good ductility and is widely used for deep drawing. In color it is yellow white. Typical uses are for hollow ware, slide fasteners, name plates and decorative trim.

Nickel-silver 65-10 with 65% copper, 25% zinc and 10% nickel, is similar to nickel-silver, 65-12, in properties and applications.

•

U. S. Consumption of Platinum Metals Dropped in 2nd Quarter

U. S. consumption of platinum-group metals was 5% smaller in the second quarter of 1954 than in the first quarter, according to the Bureau of Mines. Total imports of platinum-group metals rose 14% in the second quarter over those of the preceding quarter, and total stocks of refiners and dealers were up 1%.

Sales of platinum by refiners and dealers to domestic consumers declined 9% in the second quarter of 1954 compared with the first quarter, with a drop in sales for chemical uses accounting for most of the change. Sales of palladium were virtually the same, with moderate gains in sales for some uses offsetting moderate drops in others. Sales of iridium, osmium, rhodium, and ruthenium together declined 9% because of smaller sales for chemical, and miscellaneous uses.

Refining of platinum in the second quarter of 1954 was at a rate slightly under that of the first quarter, but imports of refined platinum (82,229 oz.) were up 44%. Sales of platinum to domestic consumers by refiners and dealers who accounted for 93% of the sales in 1953 were 67,799 oz. in the second quarter of 1954, corresponding to total sales of approximately 73,100 oz., against 80,000 oz. in the preceding quarter.

Platinum was purchased by the Government for stockpiling, USBM said. Stocks of refiners and dealers rose considerably.

Refining of palladium in the second quarter of 1954 was at a rate 12% greater than in the earlier quarter, but imports of refined palladium (53,522 oz.) were 17% less. Sales of palladium to domestic consumers by refiners and dealers who accounted for 94% of all sales in 1953 were 54,520 oz. in the second quarter of 1954, indicating total sales of approximately 58,000 oz., compared with 57,700 oz. in the preceding quarter. Stocks of refiners and dealers dropped moderately.

Refining of iridium, osmium, rhodium and ruthenium together in the second quarter of 1954 was at a rate 21% above that of the first quarter, but imports (refined metals) dropped 41%. Total sales to domestic consumers in the second quarter in ounces were: iridium—857, osmium—112, rhodium—3,140, and ruthenium 2,122. Stocks of refiners and dealers decreased slightly.

•

Lake Superior Iron Ore

Consumption of Lake Superior iron ore during October in the U.S. and Canada totaled 5,398,398 gross tons, against 4,619,853 tons in September and 8,131,437 tons in October last year, according to the Lake Superior Iron Ore Association.

Stocks at furnaces and on Lake Erie docks on Nov. 1 totaled 51,868,432 tons, against 55,698,837 tons a year ago.

Primary Aluminum Production in October Rose to 125,090 Tons

Primary aluminum production in October rose to 125,090 short tons, according to the Aluminum Association. This makes the ten month 1954 total 1,212,278 tons. Shipments in September (the latest month for which shipments data are available) were 141,709 tons, the highest of the year. The next highest was in August when 130,668 tons were shipped. The lowest for the year was in February when 94,724 tons were shipped. Production (a) of primary aluminum in the United States, 1950-1954 by months, in short tons, follows:

	1951	1952	1953	1954	Percent period of 1953	1954 total to date
January	67,954	76,934	89,895	116,247	129	116,247
February	62,740	72,374	92,649	110,483	119	226,730
March	70,022	77,069	104,460	122,339	117	349,069
April	67,701	76,880	102,071	120,434	118	469,503
May	67,720	80,803	105,464	125,138	119	594,641
June	67,454	77,476	104,152	120,758	116	725,399
July	72,698	78,368	109,285	126,161	115	841,560
August	73,816	85,175	110,545	125,296	113	966,856
September	69,429	76,882	109,333	120,332	110	1,087,188
October	72,647	77,312	108,219	125,090	115	1,212,278
November	72,246	74,639	105,636	.....	...	.....
December	72,454	83,419	110,291	.....	...	.....
Total preliminary	836,881	937,331	1,252,000			
Final	836,881	937,330	1,252,013			

(a) Based on producers' reports to Bureau of Mines. Monthly production is preliminary. Minor changes from preliminary to final annual totals indicate revisions derived from the Bureau's annual industry canvass.

Better Brass Products—
Brighter Brass Products—
Thanks to **FORMBRITE**

Manufacturer and consumer — everybody takes a "shine" to Formbrite,® the new drawing brass developed and sold by The American Brass Company, an Anaconda subsidiary.

To manufacturers, Formbrite means savings in production costs as it can be polished *in as little as half the time* it takes to polish ordinary drawing brass. In addition, Formbrite costs no more . . . yet is stronger, stiffer, "springier" — qualities which are important in stamped or drawn products.

To the consumer, Formbrite means more attractive and more lustrous brass products — products that are more scratch-resistant, too.

Formbrite is the result of special rolling and annealing processes which produce a superfine grain structure in the brass. It's another good example of the way Anaconda is working to serve American industry.

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ANACONDA
COPPER MINING COMPANY

The American Brass Company
Anaconda Wire & Cable Company
Andes Copper Mining Company
Chile Copper Company
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Anaconda Aluminum Company
Anaconda Sales Company
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If you are interested in learning more about Formbrite, write to The American Brass Company, General Offices, Waterbury 20, Connecticut.

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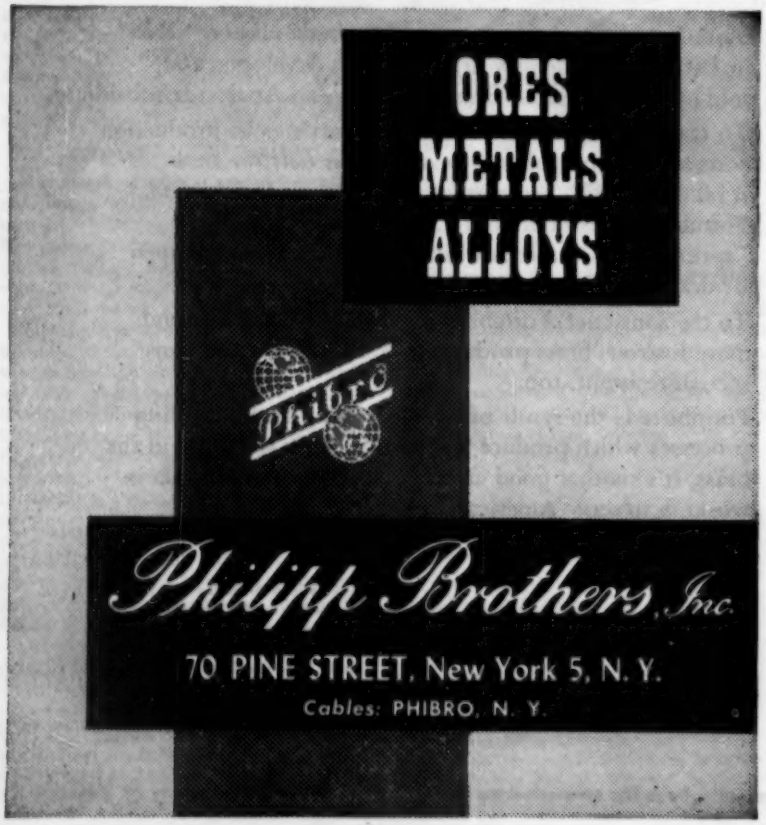

Alloys

FERROCHROMIUM — Per lb. of Cr: High carbon (4-9% C) 65-69% Cr, lump, carloads f.o.b. destination continental U.S.A., 24¾c.; low carbon, 34½c.

FERROCOLUMBIUM — Per lb. of Cb contained, 50-55%, $12.

FERROMANGANESE—$190 per net ton, 74-76% Mn, f.o.b. Clairton, Sheridan and Johnstown, Pa.; Marietta and Ashtabula, Ohio; Alloy, W. Va.; Sheffield, Ala.

FERROMOLYBDENUM, Etc. — Per lb. of Mo contained, f.o.b. shipping point: Ferromolybdenum, 55-65% Mo, powdered, $1.41, all other sizes $1.32; calcium molybdate ($CaO\ MoO_3$), $1.15; molybdic trioxide (MoO_3), bagged, $1.13, canned, $1.14.

FERROPHOSPHORUS — Per gross ton, 23-25% P, carloads f.o.b. Siglo, Mt. Pleasant, Tenn., $65. Unitage of $3 for each 1% of P above or below the 24% base.

FERROSILICON — Per lb. of contained Si, destination continental U.S.A.: 50% grade, 12c.; 75% grade 14.4c.; 90% grade, 17.5c.

FERROTITANIUM LOW-CARBON — Per lb. of Ti contained: 25%, 0.10% C, $1.50; 40%, 0.10% C, $1.35, f.o.b. destination east of Mississippi River.

FERROTUNGSTEN — Per lb. of W contained, 72-82% W, $3.80 in lots of 10,000 lb. or more.

FERROVANADIUM — Per lb. of V contained: Open hearth, $3.00; crucible, $3.10; low-carbon and silicon, $3.20.

SILICOMANGANESE — Per lb. carload lots, f.o.b. shipping point, freight allowed: 65-68% Mn, max. 1½% C, 18-20% Si 11c.; max. 2% C, 15-17½ Si, 10.8c.; max. 3% C, 12-14½% Si, 10.6c.

SPIEGELEISEN—Per gross ton, carload lots, f.o.b. Palmerton, Pa.: 16-19% Mn, 3% max. Si, $84; 19-21% Mn, $86; 21-23% Mn, $88.50; 23-25% Mn, $91.

ZIRCONIUM ALLOY — 12-15% Zr, 39-43% Si, 8c. per lb., bulk, carload lots; 35-40% Zr, 47-52% Si, 20.25c. per lb.

Iron, Steel, and Coke

PIG IRON — Per gross ton Valley furnaces: Bessemer, $57.00; basic, $56.00, and No. 2 foundry, $56.50.

STEEL — Per net ton, f.o.b. mill, Pittsburgh, billets and slabs, $64; Bars per 100 lb., $4.30; plates and structural shapes, $4.25.

COKE — Per ton, Connellsville furnace, $14.50@$15; foundry, $16.50@$17.00.

STEEL SCRAP — Per gross ton, delivered Pittsburgh No. 1 heavy $34.00; No. 2 heavy $30.00; Cleveland, No. 1 heavy $32.00; No. 2 heavy, $29.00.

E&MJ QUOTATIONS

Daily Prices of Metals

Nov.	ELECTROLYTIC COPPER Domestic Refinery	ELECTROLYTIC COPPER Export Refinery	TIN Straits New York	TIN 99% (a) New York	LEAD New York	LEAD St. Louis	ZINC Delivered (b)	ZINC East St. Louis
18	29.700	31.225	91.625	90.625	15.000	14.800	12.000	11.500
19	29.700	31.375	90.875	89.875	15.000	14.800	12.000	11.500
20	No Market	31.775	90.875	89.875	15.000	14.800	12.000	11.500
22	29.700	32.375	90.750	89.750	15.000	14.800	12.000	11.500
23	29.700	31.525	91.000	90.000	15.000	14.800	12.000	11.500
24	29.700	31.775	90.875	89.875	15.000	14.800	12.000	11.500
Averages	29.700	31.675	91.000	90.000	15.000	14.800	12.000	11.500

(a) Nominal Quotation for tin content.

(b) Prime Western Zinc sold on delivered basis at centers where freight from East St. Louis exceeds one-half cent a pound.

Correction—Domestic copper, refinery: Nov. 12, 29.700; Nov. 13, No Market.

Average Prices for calendar week ended Nov. 20 are: Domestic copper f.o.b. refinery, 29.700c.; export copper, f.o.b. refinery, 31.908c.; Straits tin, 91.417c.; New York lead, 15.000c.; St. Louis lead, 14.800c.; Prime Western zinc delivered 12.000c.; East St. Louis zinc, 11.500c.; and silver, 85.250c.

The above quotations are our appraisal of the major United States markets, based on sales reported by producers and their agencies. They represent payments received by producers for the product. They are reduced to the basis of cash, New York or St. Louis, as noted. Prices in cents per pound.

Copper, lead and zinc quotations are based on sales for both prompt and future deliveries; tin quotations are for prompt delivery only.

In the trade, domestic copper prices are quoted on a delivered basis; that is, delivered at consumer's plants. As delivery charges vary with the destination, the figures shown above are net prices at refineries on the Atlantic seaboard. Delivered prices in New England average 0.300c. per pound above refinery basis.

Our export quotation for copper reflects prices obtaining in the open market and is based on sales in the foreign market reduced to the f.o.b. refinery equivalent, Atlantic seaboard. On f.a.s. transactions we deduct 0.075c., for lighterage, etc., to arrive at the f.o.b. refinery quotation.

Quotations for copper are for ordinary forms of wirebars and ingot bars. The premiums on special shapes, effective in most instances on deliveries beginning Jan. 1, 1951, are: Standard ingots 0.125c. per pound; slabs 0.375c. and up, cakes 0.425c. and up, depending on weight and dimensions; billets 1.35c. and up, depending on dimensions and quality. Discount on cathodes 0.125c. to 0.15c. per pound.

Quotations for zinc reflect sales of the Prime Western grade as well as sales of other grades when sold on a Prime Western basis. Premiums obtaining over Prime Western zinc in the East St. Louis market on the following grades, in cents per pound: Selected 0.10c; Brass Special 0.25c.; Intermediate 0.5c. High Grade zinc sold on contract, delivered to the consumers' plant, commands a premium of 1.35c. per pound over the East St. Louis basis for Prime Western; on Special High Grade the premium or differential is 1.50c. per pound, effective Jan. 1, 1951.

Quotations for lead are for the common grade, and are based on sales of domestically refined metal sold to domestic consumers. The differential on sales in the Chicago district is 15 points under New York; for California 20 points under New York; for New England add 7½ points to the New York basis. Corroding grade commands a premium over common lead of 10 points.

Note: The daily quotations for copper, lead and zinc are weighted averages of sales reported to E&MJ; weekly averages are arithmetical averages of the daily quotations; monthly averages are the arithmetical averages of the daily quotations.

Silver, Gold, and Sterling Exchange

Nov.	Sterling Exchange	Silver New York	Silver London	London Gold (a)
18	279.3125	85.250	74.250d.	250s. 10½d.
19	279.2500	85.250	74.250d.	251s. 1d.
20	Not Quoted			
22	279.1875	85.250	74.250d.	251s. 1d.
23	279.0625	85.250	74.250d.	251s. 1½d.
24	279.0000	85.250	74.250d.	251s. 3½d.
Av.	279.163	85.250	(a) Open market	

The daily New York silver quotation reported by Handy & Harman is for silver contained in ores and other unrefined silver-bearing materials, in cents and fractions of a cent per troy ounce. It is determined by Handy & Harman on the basis of actual sales of bar silver .999 fine in amounts of 50,000 ounces or more for nearby delivery at New York as reported daily by regular suppliers, and is usually one quarter cent below the price paid for such bar silver, this reduction being allowance to such suppliers for carrying, delivering, and marketing. In addition to foreign silver, the quotation also applies to domestic silver if such silver enters the New York market.

The Treasury's purchase price of newly mined domestic silver was established at 90.5c. per troy ounce, 1000 fine, effective on July 1, 1946 under an amendment to the Silver Purchase Act of July 6, 1939.

London silver quotations are in pence per troy ounce, basis .999 fine.

London gold quotations are per troy ounce, basis 1000 fine.

Sterling quotations, in cents, represent the demand market in the forenoon.

THIS WEEK'S BUSINESS INDICATORS

	Latest Week	Preceding Week	Month Ago	Year Ago	Net Change Year Ago
Steel Rate (% of capacity in operation)	79.3	(a) 79.3	74.5	86.8	—7.5
Steel Ingot Production, thousands of tons	1,890	(a) 1,892	1,776	1,956	—66
Automobile Production (cars and trucks)	159,931	(a) 141,154	62,376	108,729	+51,202
Electric Power Output (millions kwh.)	9,197	9,357	9,117	8,457	+740
Engr'g Const. Awards, 4-week daily av., in thousands (c)	$52,808	$51,332	$41,490	$34,535	+$18,273
Federal Reserve Index of Industrial Production (e)	125 Oct.	.....	124	132	—7
E&MJ Index of Nonferrous Metal Prices (b)	187.50 Oct.	.....	186.56	180.05	+7.45
All Commodities, Bureau of Labor Statistics (e)	109.7 Oct.	.....	110.3	110.2	—.5

(a) Revised. (b) 100 is composite of 1922-3-4. (c) From Eng. News-Record. (d) Preliminary. (e) Base period 1947-49.

London Metal Exchange

Nov.	COPPER Cash Bid	COPPER Cash Asked	COPPER 3 Mo. Bid	COPPER 3 Mo. Asked	LEAD Current Month Bid	LEAD Current Month Asked	LEAD 3 Mo. Bid	LEAD 3 Mo. Asked	ZINC Current Month Bid	ZINC Current Month Asked	ZINC 3 Mo. Bid	ZINC 3 Mo. Asked	TIN Cash Bid	TIN Cash Asked	TIN 3 Mo. Bid	TIN 3 Mo. Asked
18	279	280	268	268½	109	109¼	104½	104⅝	81⅛	81½	81⅜	81½	730	732	725½	727
19	278	278½	267½	268	108	108¼	104	104½	81¼	81⅜	81⅛	81⅜	724½	725	720	721
22	274	275	265½	266	107½	107⅝	104	104¼	81	81¼	81	81¼	720	721	715	716
23	273	274	265½	266	107	107¼	104	104¼	80¾	80⅞	80¾	80⅞	723	725	717½	718
24	272	273	265½	266	105¼	105½	103	103¼	81	81⅛	81⅛	81¼	727	728	722	723

Prices are for the official a.m. session in pounds sterling per ton of 2240 lb. Copper basis wire bars, lead 99.97%, zinc 98% and tin min. 99.75%.

Note: For lead average, Monterrey, see page 15; U.S. Gold, see page 5.

Fairless — 1955 Steel Output Up 5 to 10-million Tons

The American steel industry next year will, at conservative estimate, produce from 91 to 96-million tons, surpassing by 5 or 10-million tons its 1954 production, Benjamin F. Fairless, chairman of the board of United States Steel Corp., forecast last week in a talk to the annual meeting of the Alabama State Chamber of Commerce.

As for the American economy generally, Mr. Fairless said that "My personal opinion is that the year 1955 should be one of moderate gains all along the line; and that business as a whole will gather its strength and regroup its forces for a still more rapid expansion in the latter part of the 1950's."

For the longer-term outlook, Mr. Fairless described the United States as standing "at the gateway of what promises to be a great scientific revolution," which is likely to bring about more pronounced changes in the American people's mode of living than were effectuated by the whole industrial revolution of the past.

The coming era, he said, will require "a radical change in the deployment of capital and manpower throughout our economy." It will also require the preservation of investment incentive, because at least $300-billion of risk capital will be necessary in the next 20 years for new plants, new facilities, and new lines of production not even in existence today, in order to keep abreast of the needs of a growing population.

The rise of 5 to 10-million tons—more than 6 to almost 12%—that Mr. Fairless expects in steel production next year, should take place even if consumers of steel do not build up their inventories, which have been cut in some cases, he believes, "beyond the point of prudence."

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September Tin Use Down; August Import Rate Less Than 1953

Domestic consumption of tin decreased 4% in September according to the U. S. Bureau of Mines. The quantity of tin used in September was 6,700 long tons (4,600 primary, 1,980 secondary and 120 in imported tin-base alloys). In August 7,000 long tons of tin were consumed (4,700 primary, 2,210 secondary and 90 in imported tin-base alloys). In September brass mills used 130 long tons of tin (75 primary pig tin and 55 secondary pig tin and scrap) compared with a total of 120 tons in August (85 primary and 35 secondary). Their stocks of pig tin were 125 long tons at the end of the month, a decrease of 25 tons.

Tin stocks held by the Government and industry — comprising pig tin, tin in ore, raw materials in process, and other, but excluding the strategic stockpile — increased from 40,961 long tons Sept. 1 to 42,313 tons Sept. 30. Industrial stocks of pig tin in the United States decreased 900 tons and were 11,720 tons at the end of the month. Tin metal afloat to the U. S. on Sept. 30 was 5,840 long tons, the highest since April 30, 1954.

Output of tin at the Government smelter at Texas City was 2,404 tons in September and 2,002 tons in August.

August Imports

Tin imported in ore and concentrates (tin content) in August was 2,562 long tons. Bolivia supplied 1,470 tons of this, Indonesia 1,013 tons and 79 came from other countries.

Total imports in 1953 of tin in ore and concentrates were 35,973 long tons. Bolivia was the major supplier with 18,571 tons. Indonesia was second with 8,678 tons, and Thailand sent 4,690 tons, the Belgian Congo 2,638, and other countries supplied 1,396 tons.

August imports of tin metal totaled 5,487 long tons. Malaya was the major supplier with 3,978 long tons, the Netherlands exported to the U. S. 798 tons, the U. K. 431, Belgium 200 tons and others 80 tons.

For the year 1953 74,535 tons of tin metal were imported. Malaya supplied 42,821 tons of this, the Netherlands 13,677 tons, Belgium 8,153 tons, the U. K. 7,953 tons, the Belgian Congo 1,605 tons and others 326 tons.

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Will Produce Synthetic Mica

Synthetic Mica Corp., a subsidiary of Mycalex Corp. of America, reported it is scheduled to begin production early next year at the world's first synthetic mica plant now being built by the company at Caldwell, N. J.

Jerome Taishoff, president of the parent company, estimated annual output of the 150,000-sq.-ft. plant will be 1,000 tons of high grade synthetic mica, about 5% to 10% of the nation's current requirement.

Mica is used as an electrical insulator in such defense projects as radar, guided missiles, supersonic aircraft and nuclear developments. More than 90% of the high-grade strategic type of the material used in this country is imported from India. According to Mr. Taishoff, the manufacture of synthetic mica in the U. S. would alleviate a shortage of mica if, in time of war, the foreign supply should be cut off.

Synthetic mica is made of raw materials plentiful in the U. S.—aluminum oxide, magnesium oxide, silica sand, a fluoride and potash feldspar. In many respects the synthetic material is better than the natural, claims Mr. Taishoff, because it can be given many desired properties.

One production problem of synthetic mica, however, is that the material can't yet be made in crystal size large enough for all uses. That problem, Mr. Taishoff indicated, should be overcome as larger production facilities become available.

•

September Silver Output Down

The domestic mine output of recoverable silver declined 4% in September 1954 compared with the preceding month, and the daily average production rate was 1% lower, according to the U. S. Bureau of Mines, The total production was 2,825,832 fine troy ounces in September as against 2,958,875 ounces in August. The changes in the output rate of the principal silver-producing States varied widely: Gains of 9, 11, 4, and 21% were scored in Arizona, Colorado, Idaho, and Utah, respectively; drops of 20, 83, 35, and 15% were reported in California, Montana, Nevada, and Washington, respectively.

The increase in Arizona reflected greater production of copper ores containing byproduct silver at several of the major copper mines. The gain in Colorado was due to an upward fluctuation in the output of silver-copper-gold-iron ore from the Eagle mine in Eagle County. The advance in Idaho was caused mostly by greater production from the Sunshine mine in Shoshone County. The rise in Utah resulted from the return to normal operations at the Utah Copper mine at Bingham, producing byproduct silver, closed by a labor strike during the last half of August.

Third Quarter Primary Magnesium Output Down

Production of primary magnesium during the third quarterly period of 1954 was 17,146 tons, according to the U. S. Bureau of Mines. This was 1,709 tons below the production in the second quarterly period of 1954. Production during the third quarter of 1954 exceeded shipments by 2,386 tons, leaving producers' stocks at 17,960 tons at the end of September. Production of magnesium during the third quarter came from the Dow Chemical plant at Freeport, Texas, and the Government-owned plant at Velasco, Texas. Production (a) of primary magnesium in the United States, 1950–54 by months in short tons, follows:

	1950	1951	1952	1953	1954	Percent of 1953
Month						
January	1,002	1,876	7,425	9,908	6,447	65
February	913	1,709	7,794	9,078	5,856	64
March	948	1,885	8,893	10,352	6,545	63
April	957	2,043	8,800	9,751	6,204	64
May	972	2,194	9,093	9,116	6,460	71
June	1,175	2,512	8,670	7,286	6,191	85
July	1,332	2,998	9,529	6,207	6,049	97
August	1,400	3,418	9,771	6,266	5,772	92
September	1,635	4,166	8,422	6,076	5,325	87
October	1,690	5,147	8,990	6,341	.....	..
November	1,760	6,010	9,122	6,227	.....	..
December	1,942	6,923	9,312	6,467	.....	..
Total	15,736	40,881	105,821	93,075	54,849	

(a) Based on producers' reports to Bureau of Mines. Monthly production reports are preliminary and subject to changes to final totals reflected in the Bureau's annual industry canvass.

Non-Metallic Minerals

Quotations on nonmetallic minerals continued from issue of Nov. 18:

PYRITES — Spanish 48% sulphur c.i.f. U.S. ports, not quoted.

Domestic and Canadian pyrites, per long ton, nominal at $9@$11, delivered to consumer's plant.

PUMICE STONE — Per lb. f.o.b. New York or Chicago, in barrels, powdered 3@5c.; lump, 6@8c.

QUARTZ ROCK CRYSTALS—For fusing, all sizes, $100@$150 per ton. Prisms for piezo-electrical and optical use $4.50 to $50 per pound, according to size and grade.

SILICA — Per ton, air-floated, 92-99½% through 325 mesh, in bags, $22 to $35. Glass sand, f.o.b. producing plant, $1.50@$5 per ton, bulk, depending on grade, etc.

SULPHUR—Per long ton for domestic market, $25.50@$27.50 f.o.b. Texas mines.

TALC—Per ton carload lots, f.o.b. works, containers included unless otherwise specified:

Georgia: 98 percent through 200 mesh, gray, $10.50@$11; white, $12.50@$15, packed in paper bags.

New Jersey: Mineral pulp, ground, $10.50@$12.50, bags extra.

New York: Double air-floated, short fiber, 325 mesh, $18@$20.

Vermont: 100 percent through 200 mesh, extra white, bulk basis, $12.50; 99½ percent through 200 mesh, medium white, $11.50@$12.50. Packed in paper bags, $1.75 per ton extra.

Virginia: 200 mesh, $10@$12; 325 mesh, $12@$14; crude, $5.50.

TRIPOLI — Per ton, paper bags, minimum carload 30 tons, f.o.b. Missouri: Once ground through 40 mesh, rose and cream colored, $30.00. Double ground through 110 mesh, rose and cream, $32.00; air-floated through 200 mesh, $35.00.

VERMICULITE — Per ton, f.o.b. mines, Montana, $9.50@$18.00. South African crude, $30@$32, c.i.f. Atlantic ports.

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To Lower "Buy American" Margin

Reports from Washington indicate President Eisenhower plans to reduce the margin of preference U.S. firms have relative to non-U.S. firms in Government purchases.

Under the Buy American Act, passed in 1933, the Government buys from U.S. firms rather than foreign firms unless the foreign price to the Government is 25% lower than U.S. prices. In a proposed Executive Order, according to Washington reports, the preference will be reduced to 12%.

Refined-Lead Stocks in U. S. Up 2,138 Tons in October

Refined lead stocks at U.S. primary refineries in October rose to 95,496 short tons. This is the second month in a row in which stocks increased. In September they rose from 84,429 tons to 93,358 tons, according to figures released by the American Bureau of Metal Statistics.

Shipments to domestic consumers increased to 36,307 short tons in October from 30,891 in September. These two months recorded the lowest domestic shipments of the year. October production at domestic refineries of 51,276 tons was the highest so far this year.

A summary of the September and October refined-lead statistics of domestic refineries, in short tons, follows:

	Sept.	Oct.
Stock at beginning	84,429	93,358
Production	47,762	51,276
Domestic shipments	30,891	36,307
Stock at end	93,358	95,496

Note: In instances where the figures are not in balance, it is due to shipments to other than domestic consumers.

Industrial classification of domestic shipments from primary refineries, in short tons:

	Sept.	Oct.
Cable	4,602	6,142
Ammunition	1,653	1,970
Foil	564	657
Batteries	4,110	4,172
Brass mills	20	383
Sundries	4,667	4,581
Jobbers	851	829
Unclassified (a)	14,424	17,573
Totals	30,891	36,307

(a) Includes pigments, sheet and pipe, solder, babbit, lead for tetraethyl, etc.

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Alloy Steel Output Increase

The production of alloy steel rose rapidly in October to the highest level in a year, American Iron and Steel Institute reported last week. Last month's output of alloy ingots and steel for castings was 632,342 net tons, compared with 565,317 tons in September and 662,780 tons in October 1953. Stainless steel is included in these figures. The October production was 8.2% of total steel, compared with 7.9% in the previous nine months' production. Alloy steel output in the 10 months through October was 5,684,966 tons; this is 62% of the 9,107,479 tons in the similar period of 1953.

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Smelters' Aluminum Alloys

Delivered prices of smelters' aluminum ingot, per pound, in lots of 10,000 lb. or more.

Piston alloy 21½c; No. 12 alloy, 21c; No. 13 alloy, max. .30 copper, 24c.

Deoxidizing grade: No. 1, 21c; No. 2, 20c; No. 3, 19¾c; No. 4, 18½@19c.

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Smelters' Copper Scrap Prices

Custom smelters' buying prices for scrap, carload lots, refinery:

No. 1 copper and wire, 29c; No. 2 heavy copper, 27½c; light copper, 26c; refinery brass, 25½c.

Tri-State Concentrates

Joplin, Nov. 23, 1954

Blende	Per Ton
Prime coarse (jig and table 60% zinc)	$68.00
Flotation, 60% zinc	$68.00
Galena	
Coarse and flotation, 80% lead	(a)$187.83

(a) Effective Oct. 5, 1954

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Lead Average (Monterrey)

The net price realized by the American Smelting & Refining Co. on all of its sales of Mexican pig lead, including metal sold for consumption in Mexico, during the week ended Nov. 13, 1954, was 12.72c (U.S.) per lb., f.o.b. refinery Monterrey, Mex.

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Dealers' Scrap Prices

Dealers' buying prices, f.o.b. New York or equivalent freight points, for wholesale quantities, in cents per lb.

No. 1 copper wire	25½@26
Heavy copper & wire, mixed	24½@25
Light copper	22½@23
No. 1 composition	20½@21
Composition turnings	19½@20
Cocks and faucets	17½
Light brass	12½
Yellow brass turnings, mix.	13½
Heavy yellow brass, mixed.	13½
Auto radiators, unsweated.	16¾@17¼
Brass pipe, cut	17½
Rod brass turnings, No. 1	13½@14
Rod ends, brass	15½@16
New soft brass clips	17½@18
Cast aluminum, mixed	11
Aluminum crankcases	11
Aluminum clips, new soft	14
Sheet aluminum, old clean.	11
Aluminum turnings, clean.	7½
Zinc die cast, mixed	3½@4
Zinc die cast, new	4½@5
Old zinc	4¾@5
New zinc clips	6@6½
Soft or hard lead	12@12½
Battery plates	6@6¼
Babbitt mixed	14
Linotype or stereotype	14½
Electrotype	12½
Solder joints close cut	17½
Block tin pipe	78
Autobearing babbitt	48
Monel clips, new	22@23
Monel sheet, clean	24@26
Nickel, rod ends	55
Nickel, clippings	55

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